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(58) Field of Search

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## (54) Repeater arrangement for a mobile communication system

(57) Each of a plurality of mobile stations 15 is operable for normal direct communication with a base station 11 when in the base station service area 13, and each mobile is also operable as a repeater whereby a mobile 15(2) which has moved near to or outside the boundary of the base service area 13 can communicate with the base 11 via a mobile 15(1) acting as a repeater. If the mobile 15(2) detects a received signal level from base 11 which is insufficient for communication and a level from another mobile 15(1) which is sufficient, and the levels received at mobile 15(1) from base 11 and from mobile 15(2) are both sufficient, then mobile 15(1) acts as the repeater for mobile 15(2). Communication is via time division multiplex. Each mobile has a judging circuit (25, Fig. 3) responsive to received level and also responsive to a destination ID in a received signal. A time slot disposing circuit (27) receives a control signal from the judging circuit (25). Each frame of a radio carrier may have a first half with a first set of time slots 1 to N and a second half with a second set of time slots N+1 to 2N (Fig. 2). The base 11 transmits in the first set of slots and receives in the second set of slots. In the repeater mode, mobile 15(2) transmits to mobile 15(1) in a slot of the first set and receives from mobile 15(1) in a slot of the second set, and mobile 15(1) receives from base 11 and mobile 15(2) in slots of the first set and transmits to base 11 and mobile 15(2) in slots of the second set. It is also possible for mobile 15(2) to communicate with base 11 via a series of successive repeating mobiles.

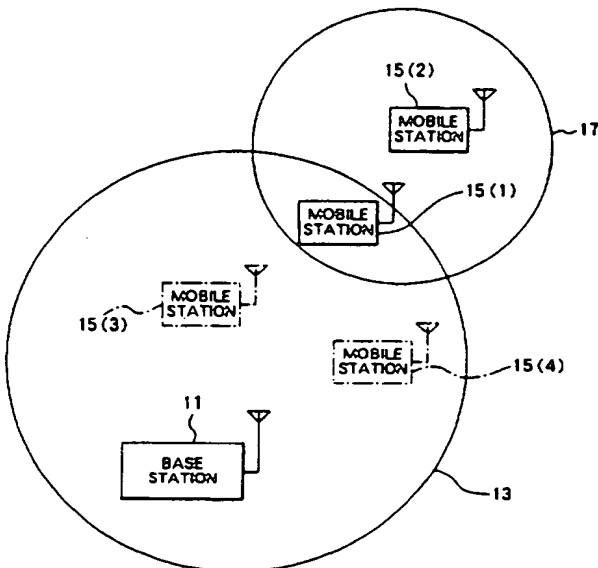


FIG. 1

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